Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An optical transmission system comprising:

a signal light source outputting signal light with a positive chirp;

an optical fiber transmission line through which the signal light propagates; and

a lumped Raman amplifier provided between said signal light source and said optical fiber transmission line, and Raman-amplifying the signal light outputted from said signal light source, said lumped Raman amplifier including:

a high-nonlinearity fiber having a negative chromatic dispersion at a wavelength of the signal light and a nonlinear coefficient $(2\pi / \lambda) \cdot (n_2/A_{eff})$ of 6.9 (1/W/km) or more which is defined by a nonlinear refractive index n_2 and an effective area A_{eff} at a wavelength of λ;

an optical coupler ~~provided between said high-nonlinearity fiber and said optical transmission line~~ arranged at one end side of said high-nonlinearity fiber; and

a pumping light source configured for supplying pumping light to said high-nonlinearity fiber through said optical coupler,

wherein a phase shift amount Φ_{LRA} of the signal light in said high-nonlinearity fiber is 1/2 or more of a phase shift amount Φ_T of the signal light in said optical fiber transmission line.

2. (Cancelled)

3. (Original) An optical transmission system according to claim 1, wherein the nonlinear coefficient $(2\pi / \lambda) \cdot (n_2/A_{eff})$ of said high-nonlinearity fiber is 12.2 (1/W/km) or more.

4. (Original) An optical transmission system according to claim 1, wherein said high-nonlinearity fiber has a transmission loss of 0.7 dB or less at a wavelength of 1500 nm.

5. (Original) An optical transmission system according to claim 1, wherein said high-nonlinearity fiber has a transmission loss whose increase, to which OH-absorption near a wavelength of 1390 nm contributes, is 0.5 dB/km or less.

6. (Original) An optical transmission system according to claim 1, wherein said high-nonlinearity fiber has a chromatic dispersion of -20 ps/nm/km or less at the wavelength of the signal light.

7. (Previously Presented) An optical transmission system according to claim 1, wherein the signal light includes a plurality of signal channels having a wavelength spacing of 10 nm or more, and said high-nonlinearity fiber has a chromatic dispersion of -10 ps/nm/km or less at the wavelength of the signal light.

8. (New) An optical transmission system according to claim 1, wherein said optical coupler is provided between said high-nonlinearity fiber and said optical transmission line.